

WHAT IS CLAIMED IS:

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1. A circuit board assembly comprising:
a circuit board;
a module mounted on the circuit board and
having an electronic circuit device and a heat
10 radiator attached to the electronic circuit device;
and
a flat coil element,
wherein said heat radiator has an
extending part protruding from said electronic
15 circuit device and extending parallel to a surface
of said circuit board;
a coil mounting area provided with no
pattern wire is formed in a part of said circuit
board facing the extending part; and
20 said flat coil element is mounted parallel
to said circuit board in a state where a coil part
of said flat coil element faces said coil mounting
area.

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2. The circuit board assembly as claimed
in claim 1, wherein said coil mounting area is an
30 opening formed by removing a part of said circuit
board.

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3. The circuit board assembly as claimed
in claim 1, wherein a distance between said

extending part of said heat radiator and said flat
coil element is set to a distance at which no eddy
current is generated within said extending part due
to a magnetic field generated by said flat coil
5 element.

10 4. The circuit board assembly as claimed
in claim 1, wherein an opening is provided in a
portion of said extending part of said heat radiator,
the portion facing said flat coil element.

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5. The circuit board assembly as claimed
in claim 1, wherein said module is a power module
20 for driving a plasma display, and said flat coil
element provides an inductance used for recovering
an electric power of the plasma display.

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6. The circuit board assembly as claimed
in claim 5, wherein said extending part of said heat
radiator extends on an output side of said power
30 module.

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7. A flat coil comprising:
a coil part formed by a pattern wire
provided on each layer of a multi-layer substrate,

wherein the coil part is electrically connected to a corresponding terminal by a conductive part extending in a direction of thickness of said multi-layer substrate, and the coil part of each layer is configured and arranged to be electrically connectable to the coil part of another layer by short-circuiting the terminals.

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8. A flat coil comprising:

a coil part formed on each of an uppermost layer and a lowermost layer of a multi-layer substrate,

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wherein the coil part is electrically connected to a corresponding terminal by a conductive part extending in a direction of thickness of said multi-layer substrate, and the coil part of each layer is configured and arranged to be electrically connectable to the coil part of another layer by short-circuiting the terminals.

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9. A circuit board assembly comprising:
a circuit board;

a module mounted on the circuit board and having an electronic circuit device and a heat radiator attached to the electronic circuit device; and

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a flat coil comprising a coil part formed by a pattern wire provided on each layer of a multi-layer substrate

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wherein the coil part is electrically connected to a corresponding terminal by a

conductive part extending in a direction of
thickness of said multi-layer substrate, and the
coil part of each layer is configured and arranged
to be electrically connectable to the coil part of
5 another layer by short-circuiting the terminals, and
wherein said heat radiator has an
extending part protruding from said electronic
circuit device and extending parallel to a surface
of said circuit board, and said flat coil is mounted
10 in an area facing said extending part of said heat
radiator.

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10. The circuit board assembly as claimed
in claim 9, wherein an opening is provided in a
portion of said extending part of said heat radiator,
the portion facing said flat coil element.
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11. A circuit board assembly comprising:
25 a circuit board;
a module mounted on the circuit board and
having an electronic circuit device and a heat
radiator attached to the electronic circuit device;
and

30 a flat coil comprising a coil part formed
on each of an uppermost layer and a lowermost layer
of a multi-layer substrate,

wherein the coil part is electrically
connected to a corresponding terminal by a
35 conductive part extending in a direction of
thickness of said multi-layer substrate, and the
coil part of each layer is configured and arranged

to be electrically connectable to the coil part of
another layer by short-circuiting the terminals, and
wherein said heat radiator has an
extending part protruding from said electronic
5 circuit device and extending parallel to a surface
of said circuit board, and said flat coil is mounted
in an area facing said extending part of said heat
radiator.

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12. The circuit board assembly as claimed
in claim 11, wherein an opening is provided in a
15 portion of said extending part of said heat radiator,
the portion facing said flat coil element.